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Last update of file: 2003/04/30 (YYYY/MM/DD) 2003-17/UP (basic update)

Search statement 1

## Query/Command : US5803975/PN

\*\* SS 1: Results 1

Search statement 2

## Query/Command : PRT FULL NONSTOP LEGALALL

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1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image

PN - US5803975 A 19980908 [US5803975]

TI - (A) Microwave plasma processing apparatus and method therefor

PA - (A) CANON KK (JP)

**PA0** - Canon Kabushiki Kaisha, [JP]  
**IN** - (A) SUZUKI NOBUMASA (JP)  
**AP** - US80607097 19970225 [1997US-0806070]  
**PR** - JP4488496 19960301 [1996JP-0044884]  
 JP5728896 19960314 [1996JP-0057288]  
**IC** - (A) C23C-016/00  
**EC** - C23C-016/34C  
 C23C-016/40B  
 C23C-016/40B2  
 C23C-016/511  
 C23C-016/517  
 H01J-037/32H3B  
**PCL** - ORIGINAL (O) : 118723000MW; CROSS-REFERENCE (X) : 118723000MA 118723000M  
 156345410 156345420 204298380 427575000 438726000 438727000 438728000  
**DT** - Basic  
**CT** - US4741800; US4776918; US5024716; US5134965; US5359177; US5487875; US5538699;  
 345982  
**STG** - (A) United States patent  
**AB** - For generating uniform high-density plasma over a large area with a low power thereby achi  
 plasma process at a high speed even at a low temperature, there is provided a microwave pla  
 apparatus comprising a plasma generation chamber having a periphery separated from the am  
 dielectric member, microwave introduction means utilizing an endless annular wave guide t  
 around the plasma generation chamber and provided with plural slots, a processing chamber  
 plasma generation chamber, support means for a substrate to be processed provided in the p  
 gas introduction means for the plasma generation chamber and the processing chamber, and.  
 for the plasma generation chamber and the processing chamber, wherein the circumferential  
 endless annular wave guide tube, the wavelength  $\lambda$  of the microwave in the endless  
 guide tube, the circumferential length  $L_s$  of the dielectric member and the wavelength  $\lambda$   
 wave propagating in the dielectric material substantially satisfy a relationship:  $L_s/\lambda = n$   
 wherein  $n$  is 0 or a natural number.

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1 / 1 LGST - ©LEGSTAT

**PN** - US 5803975 [US5803975]  
**AP** - US 806070/97 19970225 [1997US-0806070]  
**DT** - US-P  
**ACT** - 19970225 US/AE-A  
 APPLICATION DATA (PATENT)  
 US 806070/97 19970225 [1997US-0806070]  
  
 19970625 US/AS02  
 ASSIGNMENT OF ASSIGNOR'S INTEREST  
 CANON KABUSHIKI KAISHA 30-2, 3-CHOME, SHIMOMARUKO, OHTA-KU TOKYO  
 SUZUKI, NOBUMASA : 19970403  
  
 19980908 US/A  
 PATENT

20001024 US/RF  
REISSUE APPLICATION FILED  
20000908

20010213 US/CC  
CERTIFICATE OF CORRECTION

UP - 2001-07

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1/1 CRXX-©CLAIMS/RRX

PN - 5,803,975 D 19980908 [US5803975]

PA - Canon K K JP

ACT - 20000908 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20001024

REISSUE REQUEST NUMBER: 09/657971

EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1763

Reissue Patent Number:

20010213 CERTIFICATE OF CORRECTION

Query/Command : FILE INPADOC

PLUSPAT - Time in minutes : 0,73

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|   |          |
|---|----------|
| Estimated cost :                              | 1.70 USD |
| Records displayed and billed :                | 1        |
| Estimated cost :                              | 1.25 USD |
| Cost estimated for the last database search : | 2.95 USD |
| Estimated total session cost :                | 3.55 USD |

LGST - Time in minutes : 0,12

The cost estimation below is based on Questel's  
standard price list

|   |          |
|---|----------|
| Estimated cost :                              | 0.15 USD |
| Records displayed and billed :                | 1        |
| Estimated cost :                              | 0.60 USD |
| Legal-Status informations :                   | 1        |
| Estimated cost :                              | 0.50 USD |
| Cost estimated for the last database search : | 1.25 USD |
| Estimated total session cost :                | 4.80 USD |

CRXX - Time in minutes : 0,16

The cost estimation below is based on Questel's  
standard price list

|                                |          |
|--------------------------------|----------|
| Estimated cost :               | 0.28 USD |
| Records displayed and billed : | 1        |
| Estimated cost :               | 5.30 USD |
| Legal-Status informations :    | 1        |
| Estimated cost :               | 0.50 USD |

Cost estimated for the last database search : 6.08 USD  
Estimated total session cost : 10.88 USD

LITA - Time in minutes : 0,02  
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Estimated cost : 0.04 USD  
Cost estimated for the last database search : 0.04 USD  
Estimated total session cost : 10.92 USD

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Search statement 1

Query/Command : FAM US5803975/PN

1 Patent Groups

**\*\* SS 1: Results 7**

Search statement 2

Query/Command : FAMSTATE NONSTOP

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1 / 7 INPADOC - ©INPADOC

PN - CN 1294481 A 20010509 [CN1294481]  
TI - MICROWAVE PLASMA PROCESSOR AND METHOD THEREOF  
IN - NOBUMASA SUZUKI [JP]  
PA - CANON KK [JP]  
AP - CN 2000126475/00-A 20000828 [2000CN-0126475]  
PR - JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
IC - H05H-001/46; H01L-021/3065; C23C-016/513

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1 / 1 LEGALI - ©LEGSTAT

PN - CN 1294481 [CN1294481]  
DT - CN-P  
ACTE - 20010509 CN/BB1A  
PUBLICATION OF APPLICATION  
UP - 2001-39

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*2 / 7 INPADOC - ©INPADOC*

**PN** - CN 1082569 B 20020410 [CN1082569]  
**TI** - MICROWAVE PLASMA PROCESSING APPTS. AND METHOD THEREFOR  
**IN** - NOBUMASA SUZUKI [JP]  
**PA** - CANON KK [JP]  
**AP** - CN 97110001/97-A 19970228 [1997CN-0110001]  
**PR** - JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
**IC** - C23C-016/48

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*3 / 7 INPADOC - ©INPADOC*

**PN** - CN 1168422 A 19971224 [CN1168422]  
**TI** - MICROWAVE PLASMA PROCESSING APPARATUS AND METHOD THEREFOR  
**IN** - SUZUKI NOBUMASA [JP]  
**PA** - CANON KK [JP]  
**AP** - CN 97110001/97-A 19970228 [1997CN-0110001]  
**PR** - JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
**IC** - C23C-016/48

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*4 / 7 INPADOC - ©INPADOC*

**PN** - JP 3295336 B2 20020624 [JP3295336]  
**AP** - JP 40515/97-A 19970225 [1997JP-0040515]  
**PR** - JP 40515/97-A 19970225 [1997JP-0040515]  
JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
**IC** - H01L-021/31; C23C-016/50; C23F-004/00; H01L-021/205; H01L-021/3065; H05H-001/46

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*5 / 7 INPADOC - ©INPADOC*

**PN** - JP 9306900 A2 19971128 [JP09306900]  
**TI** - MICROWAVE PLASMA PROCESSOR AND PLASMA PROCESSING METHOD  
**IN** - SUZUKI NOBUMASA  
**PA** - CANON KK  
**AP** - JP 40515/97-A 19970225 [1997JP-0040515]  
**PR** - JP 40515/97-A 19970225 [1997JP-0040515]  
JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
**IC** - H01L-021/31; C23C-016/50; C23F-004/00; H01L-021/205; H01L-021/3065; H05H-001/46

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*6 / 7 INPADOC - ©INPADOC*

**PN** - KR 234509 B1 19991215 [KR-234509]

**TI** - MICROWAVE PLASMA PROCESSING APPARATUS AND METHOD THEREFOR  
**IN** - SUZUKI NOBUMASA [JP]  
**PA** - CANON KK [JP]  
**AP** - KR 9706840/97-A 19970228 [1997KR-0006840]  
**PR** - JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
**IC** - H05H-001/00

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7 / 7 INPADOC - ©INPADOC

**PN** - US 5803975 A 19980908 [US5803975]  
**TI** - MICROWAVE PLASMA PROCESSING APPARATUS AND METHOD THEREFOR  
**IN** - SUZUKI NOBUMASA [JP]  
**PA** - CANON KK [JP]  
**AP** - US 806070/97-A 19970225 [1997US-0806070]  
**PR** - JP 44884/96-A 19960301 [1996JP-0044884]  
JP 57288/96-A 19960314 [1996JP-0057288]  
**IC** - C23C-016/00

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1 / 1 LEGALI - ©LEGSTAT

**PN** - US 5803975 [US5803975]  
**AP** - US 806070/97 19970225 [1997US-0806070]  
**DT** - US-P  
**ACTE** - 19970225 US/AE-A  
APPLICATION DATA (PATENT)  
US 806070/97 19970225 [1997US-0806070]

19970625 US/AS02  
ASSIGNMENT OF ASSIGNOR'S INTEREST  
CANON KABUSHIKI KAISHA 30-2, 3-CHOME, SHIMOMARUKO, OHTA-KU TOKYO  
SUZUKI, NOBUMASA : 19970403

19980908 US/A  
PATENT

20001024 US/RF  
REISSUE APPLICATION FILED  
20000908

20010213 US/CC  
CERTIFICATE OF CORRECTION

**UP** - 2001-07

PATNO IS 5803975

DATE: MAY 5, 2003  
LIBRARY: PATENT  
FILE: ALL

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PATNO IS 5803975

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LEVEL 1... 1

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LEVEL 1 - 1 PATENT

1. 5803975, September 8, 1998, Microwave plasma processing apparatus and method therefor, Suzuki, Nobumasa, Yokohama, JP, 806070 (08), Canon Kabushiki Kaisha, JP, June 25, 1997 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., CANON KABUSHIKI KAISHA 30-2, 3-CHOME, SHIMOMARUKO, OHTA-KU TOKYO JAPAN, Reel and Frame Number: 008584/0392

CORE TERMS: plasma, chamber, processing, gas, generation, sub, microwave, substrate, film, tube ...



LEVEL 1 - 1 OF 1 PATENT

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

5803975

<=1> GET 1st DRAWING SHEET OF 9

September 8, 1998

Microwave plasma processing apparatus and method therefor

REISSUE: Reissue Application filed Sep. 8, 2000 (O.G. Oct. 24, 2000) Ex. Gp.:  
1763; Re. S.N. 09/657,971, (O.G. October 24, 2000)

CERT-CORRECTION: February 13, 2001 - a Certificate of Correction was issued for  
this patent (O.G. February 13, 2001)

APPL-NO: 806070 (08)

FILED-DATE: February 25, 1997

GRANTED-DATE: September 8, 1998

CORE TERMS: plasma, chamber, processing, gas, generation, sub, microwave,  
substrate, film, tube ...

5803975 OR 5,803,975

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